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The changes of China's environmental policies in the latest 30 years

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Abstract

As a developing country with most population, China is faced with developing economy and environmental protection. From the later 1970s, the China's policies on environmental protection may be divided five stages. However, environmental pollution and ecological degradation in China have become to be severe problems and further impacted national economy and people's health. The initials phase of the century is the crucial stage for China's efforts towards improving economic development, intensifying environment conservation, and controlling ecological degradation. Its policies on environmental protection will be most important task for the China's government and people.

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Keyword: China; Environmental protection; ecological conservation; policy

1. Introduction

From the later 1970s to now, the annual average growth of China's GDP has been keeping more than 9%, rapidly economic development has promoted the improvement of social advance and enhance of people's living. However, a large amount of natural resource has been depleting day and night and leading to serious environmental problems at the same time. To a great extent, China's environmental policies not only impact the China, but also do the world as well. As we know, China is a developing country with most people in the world. Therefore, the primary target for China's government and people is to facilitate economic growth. Through some achievements have been accomplished, there is still a long way to go before the trend of environmental pollution and ecological degradation can be reversed. Thus, China should implement the strategy of low carbon economy, proper consumption, and environmentally-friendly living style so that to stabilize social and economic growth^[1].

Only two months after the Rio Conference, China issued *Ten strategic Policies for Environment and Development* to announce its national strategy of sustainable development^[2], and in doing so was the first developing country to declare the adoption of a sustainable development strategy. In 1994, China published *China's Agenda 21*, which was also the first national level *Agenda 21* in the world^[3]. Beginning in 1995, China adopted the strategy of implementing "two fundamental transformations" (i.e., the transition from a planned economic system to a socialistic market economic system, and the resulting extensive economic growth). Since 1997, the Central

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Committee of the Chinese Communist Party (CCP) has convened special symposia every March for ten consecutive years, during which the heads of the CCP Central Committee, local provinces and municipalities, and various departments have gathered to discuss population, resource, and environmental problems. Convening of such colloquia has now become a regular institution. Since 2003 per capita GDP in China has exceeded \$1000 allowing the structure of social consumption and industry development to begin a further round of upgrades. At the same time, the serious environmental pollution nationwide and the large demand for natural resources have turned to be severe problems. Strive to seek a way to solve these challenges during the decades to come is of critical importance and will largely depend on successful development and implementation of efficient policies towards environmental protection and sustainable development.

This paper is to identify policy frame that can promote China's environmental protection and sustainable development at present and in the future through successful coordination of economic growth and environmental issues, including policies analysis, drawing on lessons and experiences from the policy changes, and bringing this paper to conclusions.

2. Policy evolution of China's environmental protection and development

When China held its first national conference on environmental protection in 1973, China started to really take action to fight environmental pollution. At that time, nearly all the major rivers faced deteriorating water pollution; many large cities were blanketed with choking air and smog; and the industrial and pesticide pollution had become especially serious. In light of these facts above, China began its environmental protection with the primary emphasis placed on pollution control and prevention. Looking back, the evolution of China's policies on the environment and development has undergone the following five great phases:

2.1. Development the adoption of environmental protection as a basic state policy to the adoption of sustainable development strategy

The State Council of China announce environmental protection as one of the two basic state policies (with the other being family planning) in 1983. After the issuance of *China's Agenda 21*, various central departments and local governments followed suit by formulating sectoral and local versions of *Agenda 21*, to be carried out by planning, legislation or regulation, policy, media, and public participation. China then set down sustainable development strategy as one of the two basic national strategies together with the strategy of "*rejuvenating the country through science and technology*" ^[4]. In recent years the environmental policy framework has been vigorously developed and renewed, resulting in a generally adequate set of environmental policies and regulations. However, government bodies responsible for the implementation are hindered by weak institutional capacities and generally lack experience in the new field of environmental management.

The enforcement of Chinese environmental law has been problematic for a large number of interrelated reasons. Different strategies have, to a certain degree, attempted to solve some of the enforcement problems, usually without considering other related issues. Currently the system of regulations is overly complex because the guidelines for environmental protection have been established through many separate rules and regulations authored by different entities at different phases. So far the effects of such a framework have not led to structural changes ^[5].

2.2. Changing focus from pollution control to ecological conservation equally

China launched its initial deeds to protect environment at the early of 1970s, aiming at the treatment of wastewater, waste gas, and waste residuals from factories. From 1980s to the early 1990s, the focus was still on pollution control. In recent years, China's investment in pollutant treatment has been soaring rapidly. The total investment in pollution control was 346 billion Yuan during the Ninth Five-Year Plan Period (1996-2000), which was 0.93% of China's GDP during the same phase. In 2003, it reached 162.7 billion Yuan, 1.39% of China's GDP.

The seriousness of ecological conservation was further recognized after the big flood of 1998. The Chinese government adopted the principle of "*devoting equal attention to pollution control and ecological conservation*" and implemented a number of policies accordingly, such as banning the logging of natural forests in the upper and

middle reaches of the Yangtze River and Yellow River, giving priority to ecological restoration during the Great Development of Western China, and converting steep arable land back to forests and grassland, among other things.

In spite of making the progresses above, China's government still faces a number of problems in ecological conservation. Its awareness is less than enough in some administrative agencies and regions. In addition, the natural reserve foundation and management tend to be quantity-based, instead of quality-based, leading to many problems in practices. For example, the local government lacked the financial capacity to help the resident in natural reserves compensate their loss by money or other means. The result was increasingly serious conflict between natural reserves and the local communities^{[6][7]}. It is crucial to establish a new management model for protected areas to address these dual goals.

2.3. Progression from end-of-pipe treatment method to source control method

China's policy-makers attempted to encourage the "Three Shifts" strategy of pollution control at the beginning of the 1990s. First, pollution control at the enterprise level shifted towards whole-process control rather than just end-of-pipe waste treatment. This was encouraged by the promotion of cleaner production (CP) conceptions and adoption of ISO 14000 certification procedures^[8]. Additionally, the *Law of Promoting Cleaner Production* was passed and put into practice in 2003. In order to restrict the development of high resource cost, heavily pollution, and technologically backward industries, China carried out a lot of pilot projects on CP through the use of World Bank loans. Despite these successes, a number of barriers to CP implementation and dissemination continue to exist in China, including knowledge and awareness problems, regulatory impediments, financial obstacles, technological difficulties, and organizational barriers^[9]. Between 1996 and 2000, China forced more than 80,000 small enterprises in 15 heavy-polluting industries to shut down or stop production lines. In effort to minimize redundant protection capacities, 43,000 small coal mines, 3069 small cement kilns, 187 small glass production lines, 111 small refinery plants, nearly 800 small power generation units and 103 small steel plants were shut down. Among another 238,000 polluting enterprises across the country, more than 90% have reached required emission standards. These successes have all been the result of policies designed to reduce pollution at its source.

In recent years China has been trying to shift the focus of pollution control from end-of-pipe treatment to the source control by adjusting economic structures. In doing so China has developed high-tech industries and tertiary industries. The shift made in industrial pollution control generated beneficial combined effects, though the level of success varied. The gross value of industrial output more than doubled between 1991 and 2003, while the total discharge of major pollutants barely increased. The municipal wastewater treatment rate also increased to 42% in 2003, but the household treatment rate only reached 25.8%^[10]. More progress needs to be made in the future to keep up with the rapid economic growth.

2.4. Moving from point source treatment to catchments and regional treatment

The "Polluter Pay" policy mainly focused on point source control and concentration control. Three state departments jointly promulgated a national plan which aimed to exercise control over the gross emissions of 12 primary pollutants (e.g., smoke dust, SO₂, COD, cadmium, lead and solid wastes, etc)^[11].

Since 1996, China has been implementing *The Transcentury Green Engineering Program*, which has focused on "Three rivers", "Three lakes", "Two zones", "One city", and "One sea" (thereinafter 33211 Project in brief). This program promotes the treatment of environmental pollution in key catchments and regions. Central measures of the program include: controlling the total amount of pollutant discharge; pollutant fees policy, and energy policy aimed at replacing coal with gas and electricity. These policies promoted pollution treatment by enterprises, urban environmental infrastructure construction, and contributed to the environmental quality improvement in some areas.

2.5 Changing from an administrative management-based method to a legal and economic instruments-based method

As the highest level of authority, the National People's Congress is in charge of legislation. Since 1990s, China has strengthened environmental legislation and a relatively complete environmental legislative framework has taken initial shape. By 2000, China had formulated 6 environmental laws, including *Environmental Protection Law*, and 12 resources laws including *Forest Law*. In 1997, *Criminal Law* added an amendment addressing and defining

“crime for damaging the environment and destroying resources”. The State Council issued 28 administrative environmental regulations, including *Regulations on Nature Reserves*. SEPA formulated 427 environmental standards various provincial government formulated more than 900 local environmental laws and regulations. These laws and regulations all contributed to the establishment of China’s environmental legal framework. While the power of supervision and monitoring mostly resides with law enforcement agencies, all those departments and institutions are responsible for making sure that industrial polluters are taking measures to control the pollution.

SEPA and the lower level environmental protection bureaus (EPB) used a variety of instruments to address the problems, including command-and-control approaches, economic instruments, voluntary actions and public participation. The regulatory and administrative framework for pollution control today is quite comprehensive and has been continuously updated and expanded to improve effectiveness and cover emerging issues.

3. Environmental protection policies face the great challenges

Environmental pollution and ecological degradation have incurred great economic losses for China. The World Bank pointed out that economic losses caused mainly by air pollution accounted for approximately 7.7% of China’s GDP in 1995 ^[12]. In accordance to the latest research, this value reached 10.3% in 2002, and the economic loss due to water pollution (6.1%) started to exceed that caused by air pollution. Three decades later, China still faces serious challenges of pollution control and ecological deterioration. The traditional path of development, get rich first and clean up later, seems to be currently being followed again in China. Accordingly, some scholarship has focused on exploring the major weaknesses of the environmental policy system.

3.1 Promoting the adjustment of economic structure

Now, the output of primary products is relatively superfluous in China. Most are made through utilization of backward technologies, suffer from lack of competition, and consume high amounts of materials and energy. The pulp & paper and textile & refinery sectors are major sources of pollution. In recent years, their growth rate has been lower than the national industrial average, while those of other less pollution-intensive sectors are relatively higher.

The material and energy consumption per unit GDP in China is far higher than that of the developed countries. Therefore, China should devote greater efforts to develop more resource-efficient and less pollution-intensive industries. In order to reduce redundant production capacity, China has been making an effort to phase out backward technologies and facilities. By the end of 2000, China had shut down 47,000 small coalmines (reduction of coal production totaled 350 million tons), and made progress phasing out outdated technologies in several sectors like textiles, for example. Also, in order to help guide these efforts, from 1997 three lists of technologies and products that should be phased out have been issued ^[13].

In addition, China should continue to eliminate outdated techniques and products, transform traditional industries by adopting new technologies and implementing CP methods, and promote ISO 14000 environmental management systems and eco-labeling. Construction of environmental infrastructure (e.g., municipal wastewater treatment plants, waste collection and disposal facilities, etc.) should be accelerated. It is hoped that with further adjustment of economic structures, less pollution-intensive and high value-adding industries will make up a greater proportion of the whole in the future.

3.2. Environmental industry development

Since 1980s, environmental industry has been developing very rapidly in China, and has by now largely taken initial shape. By the end of 2000, there were more than 10,000 enterprises and institutions (with enterprises accounting for 85%) across China that specialized in or managed environmental products, with fixed assets totaling 848.5 billion Yuan and a gross output value of 108 billion Yuan, which in turn accounted for 0.77% of the gross output value of national industry ^[14].

In 2001, eight departments of Chinese government jointly issued a report on the proposals for accelerating the development of environmental industry in order to provide technical support for ecological restoration and environmental protection. It is predicted that the gross yearly output value will reach 175 billion Yuan by 2005 and 280 billion Yuan by 2010 ^[15]. Environmental industry is becoming a new growth engine of China’s national

economy; however, it is lagging behind the advanced world level in the following ways: Firstly, the Chinese environmental enterprises are scattered and of small scale-their output value only accounts for 1% of the world total. Secondly, they specialize in a narrow range of products. They are only engaged in manufacturing of environmental equipments and facilities and the structure of products is not optimized while regional development is unbalanced. Thirdly, the technological level is low. Generally speaking, they are lagging 10-20 years behind the advanced world technology level. Lastly, the market mechanism should be improved because of the key problems of compartmentalization, local protectionism, unfair competition among enterprises, etc.

In order to promote the development of environmental industry, three conditions must co-exist: appropriate government behaviors, proper enterprise behaviors, and international cooperation. Firstly, the legal framework for environmental industry should be established and improved. The quality standards and supervision systems for environmental products and engineering projects need to be improved to standardize market behaviors. In the mean time, the government should provide financial and tax support for the development of environmental industry. Secondly, the quality of the products should be raised and the cost should be lowered. In light of the principles of the market economy, industrial bases should be established and enterprise groups formed so as to improve competitive capacity. Lastly, advanced international technologies should be introduced and assimilated in order to raise the technology level. With the prerequisite of protecting intellectual property rights, the local contents of environmental industry should be increased step by step.

3.3. Pollution prevention & control and ecological conservation

The State Council approved the National Tenth Five-Year Plan (2001-2005) for Environmental Protection in 2001, and the pollution prevention of “33211 Project” has been further promoted. In order to ensure the implementation of this Plan, it requests that the relevant departments should strengthen guidance and support it according to respective responsibilities, and especially requests that the SEPA should conduct coordinated supervision and management, and enhance the inspection thereof. However, some data shows the indicators of total discharge control of the key pollutants, that while other pollutant emissions have begun to decrease at each level, the gap between SO₂ objective emissions for 2005 and current situation (2005 or 1997) has widened. The initial falling trend has changed and emissions levels showed great a rebound in 2003, especially those of SO₂, soot, and dust from industry. This primarily resulted from the rapid growth of materials production in some major industries (e.g., steel, electrolytic, aluminum and cement). On the other hand, the energy demand for electricity and coal exceeding the supply, and the rapid growth of industries with high-energy intensity and heavy pollution, have inflicted serious pressure upon the environment and natural resources. The end result is that conflicts between industrial development and environmental protection are more serious and complex.

The local governments at various levels should undertake the major responsibilities of environmental protection, and integrate the tasks of the Plan into the target responsibilities of environmental protection, responsibility system for provincial governors, mayors, and county heads. At the same time, periodic examination should be carried out on the targets of total pollutant discharge control and environmental quality. The implementation of the Plan should be inspected and summarized every year. To achieve the target, local governments and the various departments need to strengthen pollution control in close relation with the economic restructuring, raise funds for environmental protection through multiple channels in connection with expansion of domestic demands, establish a mechanism of environmental protection wherein governments play the dominant role, and engage in market promotion and the encouragement of public participation. In light of these needs it is very important to enforce the capacity building of all institutions involved.

3.4. International cooperation and public participation

As an increasingly open country, international cooperation and public participation are necessary for sustainable development. Today, China and the international community are closely linked in their efforts to protect the environment and strive for sustainable development. Since the Rio Conference, international cooperation and exchange are becoming more in-depth and extensive. China became a full member of the WTO in 2001. This is mark's a new height in China's opening, and is a mutual and multilateral opening based on WTO rules instead of a self-motivated and unilateral one. Thus, everybody is a producer and consumer and all sectors of society have a role

in sustainable development. This includes government, non-government organizations, industry/business and the general public.

China's legal framework does not promote the creation of non-government organizations (NGOs), and environmentally oriented NGOs are still limited in scale. Furthermore, the environmental NGOs are engaged in a constant struggle for survival, characterized by legal and political constraints, lack of environmental expertise and management skills, and scarcity of financial resources. It seems that NGOs in this niche also focus on activities that support the declared environmental protection goals of the state, instead of trying to influence and sharpen government policies^{[16][17]}. On the other hand, many NGOs have official governmental sponsors who guide them through the registration process and provide political cover and support for their work. In fact, China also needs to develop a rich collection of citizens' group to respond to the growing environmental crisis, and strongly encourage NGOs to embrace the diversity of citizens groups that care about the environment, thereby allowing them to find their collective voice.

4. Conclusion

China launched its environmental protection deed, especially industrial pollution control and prevention policies in the 1970s. Many experiences and lessons can help us to face the present and future policy-making on environment. According to the severe environmental situation and the major weakness currently found in China's environmental policy system, it is necessary and very important to take integrated measures and actions to meet the great challenges and complex issues. Firstly, China should stick to be the basic state policy of environmental protection and further promote the strategy of sustainable development, while constructing a more efficient policy framework on environmental protection and development. Secondly, further promoting the adjustment of economic structure should continue, including: strategic adjustment to cut the industries with high depletion resources and serious pollutant emissions, policy reformation of natural resources to improve the integrated efficiency, and encouraging the development of environmental industry to provide technological support for environmental protection. Thirdly, to implement principles emphasizing both pollution prevention and ecological conservation, China's local governments and the various departments need to strengthen their investment and policies innovation. Fourthly, it is very important to strengthen the market promotion and public participation. Continued reformation of public administration towards good governance is essential in order to stimulate economic reform, and is a required basis for enhancing the environmental legislative framework and ensuring its implementation. Lastly, China should encourage the broad international cooperation and public participation, including government, industry or business, non-government organizations, the general public and so on.

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